

ABSTRACT OF THE DISCLOSURE

A pad oxide film and a silicon nitride film are formed on a semiconductor substrate. Next, after the patterning of the silicon nitride film, by etching the pad oxide film and the substrate, a first trench is formed in a first region and a second trench is formed in a second region. After that, by performing side etching of the pad oxide film of the first region while protecting the second region with a resist, a gap is formed between the substrate and the silicon nitride film. Subsequently, the inner surfaces of the first and second trenches are oxidized. At this time, a relatively large volume of oxidizing agent (oxygen) is supplied to a top edge portion of the first trench, and the curvature of the corner of the substrate increases.